Keep It safe!

OVERUSE INJURIES

Mr. Sansouci is an ardent runner and swimmer. To train for an upcoming 10-km race, he has decided to increase the intensity of his training. Lately, however, his shoulder and Achilles tendon have started to hurt when he works out. He wonders what could be causing this pain and what he could do to make sure he can participate in the race and perform well.

In the following pages, we will describe the main types of overuse injuries and the factors that cause them, as well as the basic principles of treatment and some advice regarding return to activity without the risk of reinjury.

Québec

Overuse injuries

An overuse injury occurs when the amount of mechanical stress applied to a region in the body exceeds the body's capacity to adapt to the stress. When this capacity to adapt is exceeded, pain, stiffness or irritation (in the form of redness, heat or swelling) can occur. Many types of structures may be affected and cause various pathologies. We will limit ourselves to the most common ones. However, we will not discuss the symptoms specific to each one as these can differ, depending on the type of injury.

1. Main types of injuries

- Tendinopathy (commonly called tendinitis) is caused by inflammation in a tendon (band of tissue that connects muscle to bone). Tendinopathy generally occurs when a tendon rubs excessively against an anatomical structure or is subjected to a load that is greater than it can bear. Common sites of tendon injury include the Achilles tendon (ankle), the patellar tendon (knee), the rotator cuff or biceps tendon (shoulder), or the wrist extensor muscles resulting in lateral epicondylitis (elbow).

- Bursitis is the inflammation of one or more bursae caused by excessive local friction. Bursae are a small fluid-filled sacs located between bones and tendons in different parts of the body. They help tendons slide smoothly. The ones most frequently injured include the subacromial bursa in the shoulder, the retrocalcaneal bursa in the heel and the trochanteric bursa in the hip region.

- Stress fractures are microfractures that are caused by repeated stress to a bone. These fractures usually occur in the lower limbs, mainly in people who practise high-impact sports such as running or those involving a lot of jumping.

- Patellofemoral syndrome is characterized by pain around the kneecap and is caused by excessive friction between the patella and the femur. This type of problem often occurs in individuals with poor control over lower extremity alignment, weak core muscles or limited flexibility.

2. Risk factors

The risk factors that contribute to overuse injuries are usually classified as extrinsic or intrinsic. Extrinsic factors include changes in the duration, frequency or intensity of training; changes in sports equipment or training surface (harder, softer, uneven, etc.); or use of improper equipment that can overload anatomical structures and eventually cause injury. Poor technique can also cause excessive stress and result in overuse injury.

Intrinsic factors are unique to each individual and include improper alignments (e.g. feet that pronate or have a weak arch), leg length discrepancy, muscle weakness, limited flexibility and lack of motor control. Thus, many factors can contribute to overuse injuries and should be analyzed in detail in order to understand the cause of an injury.

3. What to do if you get injured

If you think you suffer from an overuse injury, start by applying the "RICE" principle: rest, ice, compression, elevation. Rest the affected area to allow the injury to heal. As much as possible, avoid doing any movement that causes pain. You may be able to continue training, provided you modify the type of activity and don't use the injured area (e.g. try cycling instead of swimming if you've injured your shoulder). Apply ice to the affected area several times a day for 15 minutes to reduce pain and swelling. In acute phases, avoid heat as this can increase inflammation. If the affected area is swollen, use an elasticized bandage to keep the swelling down. Elevating the affected area slightly also helps the swelling subside.

See a health care professional to determine the type of injury you have. A sports physician can diagnose the problem and prescribe appropriate medication or tests or refer you to a specialist, if necessary. A physiotherapist or sports physiotherapist can assess the injury and determine biomechanical problems that may have contributed to the injury (reduced mobility, reduced strength, loss of motor control, lack of flexibility, etc.). He or she can conduct tests to identify the cause or source of the problem and help the affected region heal properly and can give you advice or recommend exercises to speed up your recovery.

4. Return to play

You can usually resume an activity or sport once you are able to perform activity-related movements without pain, you have full range of motion in the affected area, your strength and flexibility have returned to normal, and alignment control and balance are adequate. Resume the activity or sport gradually in order not to overload the structures that were originally affected. Keep the level of intensity and duration of the activity moderate at the beginning.

To avoid reinjury, warm up and stretch properly before the activity. Your routine should include exercises to increase body temperature as well as dynamic stretching (active movements) to prepare the affected area.

You should also try to correct improper techniques or abnormalities in biomechanics that may have caused the injury. Make sure you seek the advice of a specialist or trainer or that you complete a training program offered by a sports federation.

You may need to play in a smaller area in order to limit the amount of stress on the affected structures. For example, in tennis, it may be less stressful to play on a half court rather than on a regular court.

Make sure you check the fit and appropriateness of your equipment, such as your shoes, the grip size of your racquet and string tension, for example.

Cooling down after exercise is also important as it helps body temperature and heart rate return to normal. You may include light stretching to relax the muscles used and apply ice to the affected area to prevent the risk of reinjury, when recommended.

5. Conclusion

In cases of overuse injury, it is important to determine the source of the problem and not just treat the symptoms. If Mr. Sansouci wants to take part in his race in a few weeks, he will have to allow the affected area to heal properly by temporarily reducing the intensity of his training and by applying ice to the injured areas. Consulting a physician, a physiotherapist or a sports therapist would certainly help him determine the cause of the problem, return to activity more quickly and avoid compensating in the medium term.

Written by: Marie-Claude Saint-Amour, B.Sc. P.T., FCAMPT, Sports physiotherapy, Conseil de médecine du sport du Québec (CMSQ)

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CONTACT US

Please contact us if you would like more information or copies of our publications.

By mail: Ministère de l'Éducation, du Loisir et du Sport
Direction de la promotion de la sécurité
100, rue Laviolette, bureau 306
Trois-Rivières (Québec) G9A 5S9

By telephone: 819-371-6033 or **1-800-567-7902**
By fax: 819-371-6992

By e-mail: promotionsecurite@mels.gouv.qc.ca

Web site: www.mels.gouv.qc.ca

Éducation, Loisir et Sport
Québec